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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/973,073      | 10/10/2001  | Yasuhisa Abe         | 041514-5149         | 4681             |

9629 7590 07/16/2003

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EXAMINER

LOCKETT, KIMBERLY R

ART UNIT PAPER NUMBER

2837

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/973,073

Applicant(s)

ABE ET AL.

Examiner

Kim R. Lockett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuke in view of Okazaki et al.

3. Fuke et al discloses the use of a speaker comprising a voice coil bobbin (11), a voice coil(12) wound around the voice coil bobbin, a diaphragm (10) supported by the voice coil bobbin; and a metallic plate (21) attached to a heat radiating side. Fuke does not specifically say that his metallic plate is attached to a heat radiating side of the diaphragm for radiating heat generated in the voice coil, voice coil bobbin and diaphragm

4. Okazaki et al discloses the use of a speaker comprising a voice coil bobbin (13), a voice coil(9) wound around the voice coil bobbin, a diaphragm (8) supported by the voice coil bobbin; and a metallic plate (14) that is a heat radiation member (claim 14) attached to a heat radiating side of the diaphragm for radiating heat generated in the voice coil, voice coil bobbin and diaphragm (see column 2, lines 8-20). Regarding claim 10, the diaphragm is dome shaped (see figure 3). Regarding claim 11, the metallic plate(21) does not cover all the heat radiating g side of the diaphragm (see figure 2).

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Regarding claim 12, Okazaki discloses an edge portion around the periphery of the diaphragm (see figure 2).

5. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify to diaphragm as disclosed by Fuke and the position as disclosed by Okazai in order to provide a light weight voice coil.

6. Claims 7-9, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuke in view of Okazaki et al and Inoue.

7. Fuke and Okazaki does not disclose the use of a diaphragm molded by injection molding, metallic elements or a recess portion to receive the metallic plate.

Inoue discloses the use of a speaker diaphragm main body from a resin made by injection molding (claim 7); and a metallic plate(16-19) where the metal plate has a plurality of elongated metal elements(claim 8) that radially extend from the bobbin(11). The diaphragm as disclosed by Inoue also discloses the use of a recess portion(claim 9) to receive the metal plate (see figure 2) and has a dome (6) and conical shape.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify to diaphragm as disclosed by Fuke and the position as disclosed by Okazai and the with the injection molding, recess portion and metallic elements as disclosed by Inoue in order to reproduce clear sounds with good audio characteristics.

***Response to Arguments***

8. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

9. Any inquiry of a **general nature or relating to the status of this application or filed papers** should be directed to the **Group receptionist whose telephone number is (703) 308-0956**.

Papers related to this application may be submitted to Group 2800 by facsimile transmission. Papers should be faxed to Group 2800 via the PTO 2800 Fax Center located at Crystal Plaza 4. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 O.G. 30 (November 15, 1989). The Group 2800 CP 4 Fax Center number is (703) 308-77(22 or 24). Fax numbers that provide an auto-reply fax receipt are: for before finals (703) 872-9318 and after finals (703) 872-9319.

For assistance in **Patent procedure, fees or general Patent questions** calls should be directed to the **Patents Assistance Center (PAC) whose telephone number is 800-786-9199**. Assistance is also available on the Internet at [www.uspto.gov](http://www.uspto.gov).

For requesting copies of Cited Art, Office Actions or the like, or General Problem solving, calls should be directed to the TC 2800 Customer Service Office whose telephone number is 703-306-3329 or by fax at 703-306-5515.

Application/Control Number: 09/973,073

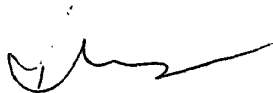
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Any inquiry concerning **this communication or earlier communications from the examiner** should be directed to **Kim Lockett whose telephone number is (703) 308-7615**. The examiner can normally be reached on Monday through Thursday from 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi, can be reached on (703) 308-3370.

*Kim Lockett*  
*Patent Examiner*  
*Art Unit 2837*



**KIMBERLY LOCKETT**  
**PRIMARY EXAMINER**